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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,398	03/07/2002	Seong-Hwoon Kim	017750-698	8639

7590 02/14/2006

Patrick C. Keane
BURNS, DOANE, SWECKER & MATHIS, L.L.P.
P.O. Box 1404
Alexandria, VA 22313-1404

EXAMINER

LEE, BENNY T

ART UNIT PAPER NUMBER

2817

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

10/09/1,398

☒ This application has been examined ☒ Responsive to communication filed on 6 Oct + 7 Dec 2005 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire _____ month(s), _____ days from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-848. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-20, 22, 23, 25, 27, 28, 30, 32, 33 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
2. ☒ Claims 21, 24, 26, 29, 31, 34 have been cancelled.
3. ☒ Claim 11 is allowed.
4. ☒ Claims 1-3, 7, 22, 25; 8, 9, 10, 27, 30; 12-14, 17, 20, 32 are rejected.
5. ☒ Claims 4-6, 23; 28; 15, 16, 18, 19, 33 are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-848).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____, filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 463 O.G. 213.
14. ☐ Other _____

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on 6 October 2005 & 7 December 2005 have been entered.

Claim 22 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 22, note that the limitation of “changing a dimension of an electrically conducting wall within the waveguide” does not appear to be supported by the original disclosure and thus is considered “new matter”.

If applicants’ disagree that the above limitation is “new matter”, then an appropriate explanation is required, including pointing out where explicit support for this limitation can be found in the original specification.

Claims 14, 20, 32; 22; 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 14, 20, note that it is unclear what characterizes “other sets of devices” relative to the defined features of the “set of devices”.

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In claim 22, note that it is unclear whether the “changing a dimension of an electrically conducting wall within the waveguide” can properly depend from the limitations of claim 1, where the “waveguide path” is changed by a respective “shutter”. Clarification is needed.

In claims 27, 32, note that it is unclear what kind of “change” in the “electromechanical devices” is contemplated by the scope of coverage encompassed by this claim. Clarification is needed.

The following claims have been found objectionable for reasons set forth below:

In claims 1, 8, 10, 12, note that --either-- should precede “ a piezoelectric” for a proper characterization.

In claim 2, line 4, note that --said-- should precede “at least one” for consistency in terminology.

In claim 18, lines 8, 9, note that --respective-- should precede each occurrence of “shutter”.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 3, 22, 25; 8, 9; 10, 27, 30; 12, 13, 14, 17, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morooka in view of Rao (both of record).

The Morooka reference discloses an in-line waveguide phase shifter comprising: a waveguide (13) having a waveguide path; an iris or wall (14) disposed within the waveguide path; a micro-electromechanical (i.e. electrostriction) element fixed to iris (14) and responsive to an actuation signal applied to electrodes (17, 18), which causes the electrostriction element to move, thereby changing the physical dimensions of the iris or wall protruding into the waveguide path; whereby the change in the iris dimension functions as a movable shutter which effects a phase shift in electromagnetic waves propagating through the waveguide. Note from Fig. 3 that a plurality of irises can be configured along the waveguide path to provide improved phase shift. The Morooka reference differs from the claimed invention in that the micro-electromechanical element is not a piezoelectric element.

The Rao et al reference discloses a waveguide phase shifter comprising: a phase shift element disposed with respect to the propagation path along the waveguide to function as a “shutter”, where the phase shift element is movably controlled by a bimorph element (e.g. of piezoelectric material), which is responsive to an applied voltage.

Accordingly, in view of the exemplary teaching in Rao et al, it would have been obvious to have modified the movable electrostriction element in the waveguide phase shifter of Morooka to have been a bimorph element such as taught by Rao et al. Such a modification would have been considered an obvious substitution of art recognized equivalent structures from the same field of endeavor (i.e. waveguide phase shifters), especially since the voltage responsive nature of the electrostriction element and the bimorph element would have suggested the

equivalents there between, thereby suggesting the obviousness of such a modification. Although Morooka discloses a single micro-mechanically adjustable iris, it would have been obvious that a plurality of such irises spaced along the waveguide path would have been likewise made adjustable. Such a modification would have been considered obvious in view of the recognition in Fig. 3 of Morooka, that a plurality of irises can be arranged in a phase shift waveguide, and in view of the recognition that by making each of these irises adjustable as taught by Morooka would have been considered an obvious optimization of the phase shift function.

Claim 7 is rejected under 35 USC 103(a) as being unpatentable over the preceding rejection as applied to claim 1 above and further in view of Malone et al (of record).

Note that the preceding combination differs from the claimed invention in that the phase shifter thereof has not been disclosed as being used in a radar transceiver.

As previously disclosed, Malone et al provides an exemplary teaching of a waveguide phase shifter being used in a radar transceiver.

Accordingly, in view of the exemplary teaching in Malone et al, it would have been obvious that alternative yet equivalent waveguide phase shifters (e.g. such as in the above combination) would have been usable therewith without altering the function of such a phase shifter within the radar transceiver, thereby suggesting the obviousness of such a modification.

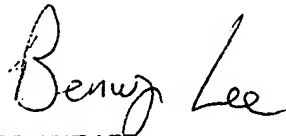
Applicant's arguments with respect to claims 1, 2, 7, 22, 25; 8, 9; 10, 27, 30; 12, 32, 34 are moot in view of the new grounds of rejection.

Claims 4-6, 23; 28; 15, 16, 18, 19, 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Claim 11 is allowable over the prior art of record.

Any inquiry concerning this communication should be directed to Benny Lee at
telephone number 571 272 1764.

A handwritten signature in black ink that reads "Benny Lee". The signature is written in a cursive, flowing style.

BENNY T. LEE
PRIMARY EXAMINER
ART UNIT 2817

B. Lee